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A
VIEW
OF THE
PAST AND PRESENT STATE
OF THE
WORKS
FOR
SUPPLYING DUBLIN WITH WATER.

By **ANDREW COFFEY, Engineer.**

Dublin:

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A VIEW, &c.

THE importance of Works for supplying cities and populous towns with water must be obvious to every one who will be at the trouble of taking the subject into consideration. Their advantages as to convenience, comfort, cleanliness, and the health of society, are inestimable; for manufacturing purposes they are exceedingly beneficial; and, for the public safety, in the event of accidental fire, their importance is incalculable.

In the most enlightened periods of Rome, those establishments were held in such high estimation that their aqueducts were amongst the most elegant and expensive of their public structures. At the present time there are few works of greater importance to London, than the New River Head Water Works, and the memory of their founder, Sir HUGH MIDDLETON, is held in the highest veneration, for his genius and exertions in bringing part of the river Lea

from Ware, in Hertfordshire, to Islington, for supplying the Metropolis with water; and, in every history or description of that city, his name is introduced with great eulogium, for his conduct on that occasion. The funds for effecting that undertaking were created in the reign of James the first, by an extensive subscription; but the project was very injurious to the original subscribers, being for a great length of time attended with considerable loss; and Sir HUGH, who devoted himself and property exclusively to its completion, became embarrassed, and died in distress.

Long before Sir Hugh Middleton's time, a similar work was carried into effect by the Corporation of Dublin, who, with their own funds, at an immense expense, constructed a weir of strong masonry, of great extent, in the river Dodder, near the mountains beyond Templeogue, with several sluices therein, for preventing the adjoining country from being injured by the excessive floods which frequently occur in that river, owing to the great extent of the contiguous mountains. From this weir they formed a meandering water-course, according to the levels of the surface of the

ground, of several miles in length, by means of which, the water of that river was diverted from its natural course towards the sea, into Dublin, for the supply of its inhabitants. In addition to those extensive works, a system of pipes was established within the city for conveying and distributing the water, as appears in Stainhurst's "*Antiquities of Dublin*," wherein he states "That in 1308, John Le Decer, the first Provost of Dublin, erected two public pipes for supplying the poor with water, one at Corn-market, and the other, called the high pipe, in High-street," from which it is evident that pipes must have been previously laid for conveying water to those places, as from the situation of Dublin, with respect to the waters in the surrounding country, it is impossible that such could have been otherwise effected.

It may fairly be presumed that the Corporation expected to be remunerated by the public for carrying into effect so important an establishment for the general benefit of society; such an expectation was unquestionably just and reasonable; but, so far was it from being realized, that they expended a very great portion of their revenues, and encumbered their

estates with the greatest part of their present heavy debts, in constructing and keeping up those works, for which it is likely they will never receive what would be a tenth of a just or adequate compensation.

When population increased in the country through which the water-course runs, manufacturers and others were frequently found to commit trespasses and abuses thereon, and also to obstruct the workmen of the Corporation, when employed in repairing the several structures and embankments in the line of the course, in consequence of which, an Act of Parliament was passed in the 6th of Geo. 1st, which Act completely recognizes and establishes the property of the Corporation in those works, as will appear from the following abstract, viz:—

“Whereas the city of Dublin hath for many
 “ages past been seized and possessed of a
 “water-course, taken out of the river Dodder,
 “beginning at the weir at the foot of Balrud-
 “dery-hill.”—And again, “That the Lord
 “Mayor, Sheriffs, Commons, and Citizens of
 “the city of Dublin, and their successors, shall
 “and may, peaceably and quietly, possess and

“enjoy the aforesaid ancient water-course, and
 “have free liberty, from time to time, without
 “being liable to any trespass or other action
 “for the same, to enter, with necessary work-
 “men, horses and carriages, on any land or
 “ground through which the said water-course
 “doth run, to dig and trench, repair, sustain,
 “and amend the said water-course and weir.”
 This Act also arms the Corporation with ample powers to prevent all trespasses, abuses, or diversion of the water from said course; and imposes heavy penalties on any person who shall molest or interrupt them in exercising their rights in the whole of these works.

In the rolls of the city assemblies there are numerous particulars of alterations, extensions, and renovations that have been made in those works, from which it is evident that they (in common with all such establishments) were carried on with progressive improvements and extensions, as necessity, experience, and increased skill gave occasion and afforded opportunity for; and although the Corporation found the frequent recurrence of those circumstances to be an insatiable drain on the rents of their estates, they could not, consistently

with their regard for the convenience and safety of the city, relinquish the burden, notwithstanding the sacrifices it required for supporting the establishment.

It is impossible to go into a detail of the several alterations and continual repairs that were unavoidably necessary to meet the several changes that must have occurred in the city, and the effect of the decay of the materials of which those and all other such Works were composed; it will be sufficient to mention a few of the most important occurrences:—

Previous to the year 1555, the entire water of the course came into the suburbs of Dublin, before it was partitioned; at which time a great portion ran through a stream called Coleman's Brook, along Rainsford-street, Thomas-court, and Thomas-street, for supplying the liberties of the city; and the remainder flowed through the Earl of Meath's liberty, in a course called the Poddle; but, in that year, during the Mayoralty of PATRICK SARSFIELD, a very considerable and expensive improvement was effected by dividing the

course with a structure called the Tongue, near Kimmage, bringing one-third of the water in a more elevated and direct conveyance into Dublin, through Dolphin's-barn, and along the rere of the South side of James's-street, to James's-gate, from whence there were laid such Pipes as were deemed adequate to the supply of the then extent and population of the city. By these works, with additional extensions, almost constant repairs, and frequent renovations, the city continued to be supplied for some time.

They were, however, in the year 1760, found so inadequate as to require further improvement, by rebuilding part of the water-course and cistern at James's-gate, so as to have a more commanding power for supplying the higher streets; and by constructing a subterraneous course through Thomas-street, to a sunk cistern at the South end of New-row, from which was laid a six inch main over the old bridge, for supplying the North side of the city. There were also laid, at that time, other additional mains and service pipes; and, from the subterraneous course, there were several small cisterns supplied in the streets, where

pumps were fixed for the use of the poor, similar to that which lately stood in New-market, on the Coombe.

These alterations were no doubt effectual for some time; however, in a few years, the Corporation found it necessary to undertake other improvements, by providing a capacious and elevated reservoir, and considerably to increase the works of conveyance; accordingly, in the year 1721, they purchased a large tract of ground in the South West suburbs, where they constructed the present reservoir, called the City Basin, on a site of nearly four acres; and, to supply it to the necessary height, they were obliged to elevate the water-course, by masonry and embankments, through Dolphin's-barn, and along the commons of Kilmainham, several feet above the level of the ground; from this reservoir they laid a leaden conduct pipe, of ten inches diameter, into James's-street, and from it they continued into town, three mains of six inches diameter, and from these a great number of lateral ramifications, so as to extend through upwards of ninety streets. If the reader will pause here, and contemplate the magnitude of those works,

he must be impressed with a conviction, that they could not have been effected but at an immense expense.

There can be no doubt but those improvements were attended with satisfactory results for some time; their efficacy, however, was not of very long duration, as is evident from there being several essays published in the year 1735, on the subject of further improvements for better supplying Dublin with water; one of those was written by Mr. RICHARD CASTLES, an eminent Architect of that day; another by Mr. GABRIEL STOKES, an excellent Mathematician; and a third by Mr. JAMES SCANLAN, a Gentleman who had acquired great skill in such works, by being employed in similar establishments in other countries. This Gentleman's propositions having been approved of, he was employed Engineer of the establishment, when he commenced, and took up the ten inch conduct pipe, and inserted it in ten short lengths in the late arch of the City Basin, and from eight of these he laid down mains, of six inches diameter, into the city; and conformably to his plan, the Corporation purchased, at an expense of £3500, the weirs

and mills of Island-bridge, where he constructed a powerful water engine, by which a supply was forced, through two six inch mains, from thence, into the North side of the city of Dublin, and from these, and from the mains of the Basin, there were then laid several lateral service pipes, so as to extend through one hundred and eighty-five streets.

Notwithstanding those great improvements, the works were, in a few years, again found to be inadequate, which induced the Corporation, in the year 1772, to offer a liberal premium to whoever would furnish them with the best plan of works for supplying Dublin with water; nothing however was offered on that occasion, except a very limited proposition by Mr. SAMUEL SPROULE, (a Gentleman still living in the neighbourhood of Dublin,) consequently nothing was undertaken at that time.

Hitherto the Corporation received no compensation for supplying the city with water, except from those who choose to apply for permission, and openly take a supply into their houses; but strange as it may appear, it

is an undoubted fact, that a petty species of parsimony so pervaded the minds of the generality of the inhabitants, that comparatively few would incur the ■-expense of openly taking in a branch, and pay for their supply, although the charge was only Twenty Shillings per annum for a private house, and Forty Shillings for a public, or huxter's, pipe, and rather than do so, they had recourse to various contrivances to procure the water, and evade the trivial expense of getting it fairly; some procured it by private communication with their neighbours' branches; others by surreptitiously getting in branches by night, or by excavating under ground to the mains; some purchased it from hawkers by the tub; and the greater number were supplied from the huxter's shop, where, no doubt, they paid highly for it, in the price of the articles they dealt for, as none but customers were allowed to get water at a huxter's pipe.

It was impossible that the Corporation could continue to sustain the heavy drains on their estates, which the keeping up this establishment occasioned, and as it was evident that every inhabitant of the city consumed

their water, it was considered reasonable it should be paid for; they therefore applied to Parliament, in the year 1775, when an act was passed to oblige the proprietor of every house, before which main or service pipes were laid, to pay a very small stipend for the water they consumed, and, in addition to the water of the course, in order to be prepared for every exigency, they entered into an agreement with the Grand Canal Company, for an ample supply, and in pursuance of the arrangements then made, Mr. WILLIAM MYLNE, (brother to the late Mr. ROBERT MYLNE, Engineer, of the New River Head Water Works of London,) was appointed Engineer of the Dublin Water Works, who immediately took the necessary levels, assisted by the writer of this statement, and having ascertained the extent and population of the city, and the state of the works for its supply, he commenced laying two additional mains, of seven inches diameter, and also to make a general renovation of the old ones, as well as of the several lateral service pipes; he also substituted new service pipes for many, which he was obliged to abandon, from being of extraordinary depth in the ground, and at this period there were several

new extensions laid, amounting to several miles in length.

On the completion of those works, the inhabitants were amply supplied for some years; however, at the usual period of time, the effects of decay began again to be experienced, so that it became necessary, in the year 1788, to lay down two other seven inch mains, and to make extensive repairs on the old works, which gave the usual relief; but it was (and indeed could) only be of similar duration with what was experienced from all the preceding works.

On the decease of Mr. MYLNE, in 1790, he was succeeded by Mr. JAMES JOHNSTON, a very eminent scholar, who had not however been before engaged in any such mechanical or practical pursuits. In his time several alterations took place; an additional seven inch main was laid from the Basin, to supersede the Engine at Island-bridge, which had become quite a ruin, and the mains leading from it were taken up, on account of that bridge being taken down, and the road where the mains lay, entirely changed. Indeed the abundant supply of

water furnished by the other two sources, viz. the water course, and the canal, rendered it inexpedient to continue the use of a very expensive forcing engine, particularly as its operation was subject to be impeded and interrupted by spring tides, floods, and frequent repairs. As, however, the works could not possibly be preserved from decay, ineffectual service again necessarily followed, in consequence of which, the complaints for want of water became so frequent, and so general, that the Corporation found it necessary to consult along with Mr. JOHNSTON, Sir THOMAS HYDE PAGE, Mr. JOHN RENNIE, an Engineer of great eminence, from London, and with the writer of this, who had been employed in those and other water works for many years.

In the consultation of the Engineers, it was generally admitted, that a primary improvement in the system was indispensably necessary; or, "That until some change was made "in the plan, the complaints of ineffectual service must last as long as the works." Yet, strange as it may appear, it is a fact, that nothing whatever was offered in the way of improvement at that time, although one of the

Engineers claimed, and was paid, One Hundred Guineas, for five days' attendance on the occasion.

In consequence of which, the complaints for want of water, as might be expected, not only continued, but increased daily; which induced the present Engineer, who had devoted his life to the theory and practice of water works, to publish "A general view of the water works of Dublin, with propositions for their improvement, so as to render them permanently effectual, and ultimately less expensive."

In this publication, after some introductory observations, it was stated, "That in consequence of the Basin, or reservoir, being in the South West suburbs, very remote from the principal population, the mains leading therefrom were of extraordinary lengths before they arrived at their place of distribution, and being made of timber (as all such works then were) they of course must be subject to extensive decay, and frequent failures; and to impress a conviction of this fact, and its consequences, the following representation of one main was given as an illustration."

“In the line of each main pipe there are
 “several hundred pieces of timber, many of
 “which have been down a number of years;
 “of course they must be in some degree of
 “decay, the consequence of which is, that it
 “frequently occurs that the piece which is
 “weakest, and most decayed, gives way and
 “bursts, and it too often happens that such
 “breaches do not appear above ground, the
 “water taking the readiest passage downwards
 “through open gravel or sandy soils, but more
 “commonly through sewers with which the
 “streets of Dublin are exceedingly intersected;
 “and the first indication of the occurrence of
 “the breach is the ineffectual operation of the
 “main in all its lateral and collateral services;
 “and when a length of time has produced con-
 “siderable deterioration, several such latent
 “breaches occur at the same time, which causes
 “the discovery to be tedious and difficult;
 “during making the necessary experiments in
 “search of the breach or breaches, and making
 “the necessary repairs, the main must be
 “totally inoperative, which not only occasions
 “great distress, and loss to the inhabitants, but
 “puts them in the most serious danger in the
 “event of fire; but the evil does not stop here,

“for on making those repairs, the strength or
 “pressure of the water is restored in the main,
 “so as to endanger the bursting of the piece in
 “the next similar state of decay, which must
 “be followed by the same process and effects;
 “nor can these circumstances be avoided so
 “long as the works are constructed as they
 “now are; for although there is an ample
 “number of persons employed who sedulously
 “exert themselves, and large sums of money
 “continually expending, yet when extensive
 “decay takes place there must be frequent
 “distressing and dangerous interruption in the
 “supply of water.*

“When the foregoing representation of one
 “main is extended to the whole, (and it is indu-
 “bitably applicable to them all,) it must cause
 “a very unfavorable impression of the entire
 “system; it is, however, of importance to have
 “it faithfully exhibited, to show the necessity
 “of adopting such improvements as will secure

• An objection was made to this statement, by a person observing that continual decay only proved the necessity of continual renovation, and it was the duty and inclination of the persons employed to effect it; but the objector forgot that continual renovation must unavoidably occasion continual interruption of supply, as no water can pass through a main, or service pipe, while it is renewing. In fact it is puerile to attempt justifying a construction of works that require continual renovation, even if the expense was only taken into consideration.

“an ample and regular supply of water for
 “private and manufacturing purposes; as also,
 “an immediate and abundant quantity in the
 “event of accidental fire; thereby to preserve
 “the inhabitants from the inconvenience, the
 “loss, and the danger to which frequent pri-
 “vations of water must always subject them.”

“From the foregoing retrospective view it
 “is evident, that laying additional works, sub-
 “ject to similar occurrences, cannot be con-
 “sidered a change in the plan, or an improve-
 “ment in the system; on the contrary, it would
 “tend not only to perpetuate but to increase
 “the evil, as laying additional lengths of wood-
 “en pipes must be extending the foundation
 “for decay, failures, and complaints.”

Before the time of the publication of this
 “General View, &c.” the Royal Canal had
 been made navigable from Dublin to a consi-
 derable distance in the country, which gave oc-
 casion for one of the following propositions:—

“In the original formation, or subsequent
 “improvement of extensive water works, it is
 “necessary, in the first instance, to attend to

“every local circumstance peculiar to the situ-
 “ation that may be applicable to the occasion;
 “and, in the present instance, the principal
 “objects of attention are, first, that Dublin is
 “built on three eminences, and the intervening
 “valleys; two eminences on the South side, as
 “Stephen’s-green, York-street, Bride-street,
 “&c.; the other, James’s-street, Thomas-street,
 “High-street, &c.; these are divided from
 “each other by the valley through which the
 “Poddle stream passes;—the other eminence on
 “the North side, as Dorset-street, Mountjoy-
 “square, &c. which is divided from the other
 “two by the valley through which the Liffey
 “runs. The second object of attention is, that
 “there are abundant sources of supply on each
 “eminence, of commanding height, for supply-
 “ing the highest parts of the city.”

“When the first of those positions is duly
 “attended to, it will evince the important ad-
 “vantages to be derived from what is mentioned
 “in the second, and must impress on the mind
 “of those who are skilled in Hydraulics, and
 “the practical operation of such water works,
 “the propriety of having a reservoir on each
 “eminence; the Basin near James’s-street is

“exceedingly well situate for supplying the
 “South West quarter of Dublin, the mains
 “leading therefrom would generally descend
 “to the line of the Liffey and the Poddle; and
 “for supplying the South East quarter there is
 “an excellent situation for a Basin, at Porto-
 “bello, from which the mains would have a
 “regular descent to the line where the others
 “would terminate; and for supplying the part
 “of Dublin on the North side of the Liffey,
 “there is a very good site for a reservoir, be-
 “tween the Broad-stone, level of the Royal
 “Canal, and Blessington-street, affording simi-
 “lar advantages in the range of the main pipes
 “leading from it.”—The present Engineer had
 ascertained, by the spirit level, the relative
 advantages of each of those sites.

“By this disposition of reservoirs there
 “would be a powerful head of water, in com-
 “manding points, round the general centre of
 “population, for supplying every part of the
 “city with very great facility; it would also
 “prevent the mains from being of extraordinary
 “lengths, and their having the form of inverted
 “syphons in passing from one eminence to
 “another, both of which circumstances are great

“impediments to the effectual operation of the
“present system.”

“The next subject of consideration is, the
“conveyance and distribution of the water.
“A work on which such a city as Dublin is to
“depend for its supply of water should be
“liberally entered upon, to secure permanent
“convenience, comfort, and safety. It is
“therefore proposed, that the works for the
“conveyance of water through Dublin, should
“be made of the most durable materials that
“can be procured on terms within practical
“attainment; and here it is unquestionable that
“reason points out cast iron, commonly called
“cast metal, for the purpose.”

The propriety of substituting cast iron for
timber pipes, in extensive water works, is now
become evident, from its being universally
adopted in all such establishments.

It is not now necessary to go into the de-
tails of the arrangements of the main and
service pipes, stop-cocks, and various other
works; it will be sufficient to state that the
conclusion drawn from that production was,

that by adopting the proposed system there would be the least possible hazard of any part of Dublin being thereafter disappointed of an ample and regular supply of water.

A little before this period, (viz. in the year 1807,) an extraordinary proposition was made for interfering in those Pipe Water Works, which was introduced into the Paving Act of the 47th of His late Majesty, by which it was enacted, "That the Corporation should have their main and service pipes for supplying the inhabitants of Dublin with pure and wholesome water, laid upon ledges in the common sewers, for conveying off all the various species of filth from the city. This project was considered not only absurd and disgusting, but that it would be a dangerous innovation in the management of a system of works that are, and always must be, of the most paramount importance to the community; it was therefore opposed by the Engineer of the establishment in a strong remonstrance, addressed to the Pipe Water Committee, who immediately applied to Government on the subject, when the Lord Lieutenant was pleased to recommend that other Engineers of eminence should be con-

sulted, in consequence of which, the Engineer was sent to lay the subject before the principal Engineers of the Water Works of London, and to get their opinion thereon. This was accordingly done, and on his return in August, 1808, he laid before the Committee, the following papers:—

No. 1.

29th August, 1808.

MY LORD, AND GENTLEMEN,

“Agreeably to your order, conformable to the
 “recommendation of His Grace The Lord Lieutenant, I
 “have consulted the several Engineers of Water Works in
 “London, on the proposed measure of having your pipes, for
 “supplying the inhabitants of Dublin with water, laid upon
 “ledges in the commonsewers of the city; and, in answer to
 “the following Letter, I have the honor of laying before
 “you, the Reports of those Gentlemen on the subject.”

“I am, MY LORD, AND GENTLEMEN,

&c, &c. &c.

“ANDREW COFFEY.”

To the Right Honorable The Lord Mayor,
 and Gentlemen of the Pipe Water
 Committee. }

No. 2.

*A Circular addressed to the respective Engineers of
the London Water Works.*

25th July, 1808.

“SIR,

“A Board of Commissioners having been lately
“established by Act of Parliament, for Paving, Cleansing,
“and Lighting the streets of Dublin, who are vested with
“power to construct sewers through that city, with ledges
“therein, for supporting the main and service pipes, for
“supplying the inhabitants and manufacturers with water,
“and for enforcing them to be laid thereon, which sewers
“have been commenced with corbal or projecting stones
“therein for the above-mentioned purpose.”

“The Lord Mayor, and the Gentlemen of the
“Pipe Water Committee of Dublin, have therefore directed
“me to request you will have the goodness to take this
“subject into consideration, and favor them with your
“opinion, as to the propriety of such a measure, and what
“consequence would result to their works if it were carried
“into effect.—The following are the Clauses in the Paving
“Act, which relate to this subject, viz.—Clause 52, 55, 68,
“70 and 98; copies of which are herewith sent.”

“I am, SIR, &c. &c.

“ANDREW COFFEY,

“Engineer of Dublin Water Works.”

No. 3.

*Report of ROBERT MYLNE, Esq. Engineer of the New
River Head Water Works; of which the
following is an Extract:—*

“It would be trifling with the subject, and all the
“parties interested therein, to hesitate a moment; I there-
“fore request you will state it as a most improvident and
“absurd proposition. The Water Works would be ruined
“in that effect for which they have been wisely constructed;
“and also, incapable of repair with that quick despatch
“which the case requires.”

No. 4.

*Report of JOHN FOULDS, Esq. Engineer of London
Bridge Water Works.*

(EXTRACT.)

“The advantages of affording an ample supply of
“good and wholesome water to a great city are such, that
“every thing should be done to afford facility in carrying
“on works for that purpose; and nothing should be per-
“mitted that would tend to retard or impede their operation,
“and I have no hesitation in declaring that the proposed
“measure of placing the pipes in sewers would not only do
“so, but would ultimately be the destruction of the works, in
“respect of the purposes for which they were constructed.”

No. 5.

*Report of RALPH WALKER, Esq. Engineer of East
London Water Works.*

(EXTRACT.)

“I am also of opinion that the bad smell which the
“water would acquire, and the danger to be apprehended
“from making use of it, would prevent any persons who set
“any value upon their health, from taking water from
“the concern, who could be otherwise supplied, which, in
“the end, would be ruinous to the Pipe Water Works.”

No. 6.

*Report of THOMAS SIMPSON, Esq. Engineer of
Chelsea Water Works.*

(EXTRACT.)

“I am clearly of opinion, that taking all the circum-
“stances attending it into consideration, the Board of Com-
“missioners would be disappointed in their object, with
“respect to the less damage being done to the streets by
“laying the pipes as directed by the Act of Parliament;
“and it would be attended with endless trouble and expense
“to the Water Company, if even the thing were practicable,
“which I much doubt.”

On the foregoing reports being laid before Government, His Grace The DUKE OF WELLINGTON, directed that the preparatory works for laying the main and service pipes, in the common sewers of the city, should be discontinued. Thus, by the strenuous and determined energies of the Engineer, that extraordinary project which had been sanctioned by an Act of Parliament, and which would have been destructive to the Corporation's Water Works, was superseded; and Major TAYLOR, at whose instance the proposition was introduced into the Paving Act, was obliged to abandon it altogether.

The measures proposed in the before-mentioned publication being determined on, and agreements entered into with the Grand, and Royal Canal Companies, for supplies of water, it became necessary to procure an Act of Parliament for carrying the new works into effect, on which occasion the Engineer was sent to attend the Committees of the Houses of Lords and Commons, before whom he gave satisfactory evidence of the importance and necessity of the proposed new improved system of works, and accordingly the Act was passed

in 1809, and the new system of works was immediately proceeded in, and carried on with great energy, and to complete effect.

In the original formation of such great works at so remote a period, it is to be expected that many defects would occur; and it is only by extensive experience that such defects could be discovered, and adequate remedies be devised. The following circumstances will illustrate this fact. From time immemorial the water-course at the weir beyond Templeogue, used to be filled up with gravel and sand, brought down by every flood; and on every such occasion it was necessary to send a number of workmen to remove the obstruction they formed in the course, so as to let the water pass into town. To remedy this defect the writer of this, proposed and constructed a pair of sluice gates, above the weir, by opening of which, on the indication of floods, the gravel and sand are carried down the river Dodder, and the water-course preserved free from obstruction. By this improvement a considerable annual expenditure has been, and will always be, saved to the Corporation.

In the year 1776, Sir JOHN TRAIL constructed the overfall by which the city Basin is supplied from the Grand Canal; the overfall is necessarily thirty-eight feet in extent, as the depth flowing over it can never be more than a few inches; but the aperture at the bottom, in front, was only two feet wide, which caused a vortex in the water passing into the Basin, that occasioned very improper substances to be drawn in. On discovering this great defect, the writer of this proposed and constructed an improvement, by opening the whole front of the overfall, guarded by a permanent grating, letting the water pass in freely the entire extent, which prevents the vortex; and he also made the aperture midway between the bottom and surface, by which contrivance the water is received into the Basin with the greatest possible purity. This was an improvement of the utmost importance.

The original works in the city Basin, from which the main pipes emanate, were constructed by Mr. JAMES SCANLAN, about the year 1737; they consisted of a screen chamber, and screens, but were so defective, both in materials

and construction, that they became deteriorated in a few years, so as to be totally useless; this has been remedied by making both of the most durable materials, and of the most permanent construction; and they are now such as to have met the decided approbation of every scientific and practical Engineer who has examined them.

There is one other improvement that should not be omitted. The stop-cocks formerly used in water works were not only very expensive, but very defective in operation; and an effectual one that could be easily and expeditiously kept in order, at a moderate expense, had been a great desideratum, in water works, for centuries. The writer of this having frequent occasion to construct different kinds of valves for Hydraulic and other apparatus, took into consideration the practicability of making stop-cocks upon similar principles, and, after some experiments, he completely succeeded, and produced one that has stood the test of more than forty three years, and has saved the Corporation a considerable annual expenditure, and will long continue to do so.

The foregoing account of the Dublin Water Works, from the earliest date to which they could be traced, to within the last half century, are from the most authentic documents that were to be found; and, from that period to the present time, they are given from personal knowledge.

The first object for writing this is to show the zealous perseverance with which the predecessors of the Corporation had established and kept up those works, without which the inhabitants of Dublin could not have existed except in a state of the most distressing privations of one of the first necessities of life, particularly on occasions of epidemical diseases and accidental fire, both of which are recorded to have often occurred. The second object is to show the zeal, energy, and skill with which an entire new system of works has been latterly devised and constructed, equal, if not superior, to any in the Empire.

I now beg leave to state, that I have been employed in those works from my boyhood to the present time, embracing a period of more

than fifty-five years, and had the good fortune to be instructed in the sciences appertaining to such works, by Mr. James Dinwiddie, a Professor of the New College in St. Andrew's, Scotland, who gave many courses of Lectures in Dublin, in the years 1785, &c. and to whom I was assistant on every such occasion. I was also favoured with the instruction and patronage of Mr. William Mylne, who was Engineer to the Dublin Water Works from the year 1777, until his death in 1790, and whose memory I must ever revere for his goodness on every occasion, particularly for his extraordinary liberality in reporting highly of me to the Corporation some time before his death. *

* (*Extract from a report of Mr. Mylne.*)

“Before I conclude I think it is but Justice in me to declare that Andrew Coffey is an ingenious young man, who has all along conducted himself with the greatest propriety and was the only person employed in the Works I could put a trust in, in cases of emergencies.

WILLIAM MYLNE.

Dublin, 10th April, 1786.

I also beg leave to state that however perfect such a great system of Works may be, they cannot continue in a state of effectual operation without the superintendence of a competent master of the subject, and that none but a person who has given ample proof of his skill and abilities can be confidently depended on for that purpose.—I now submit this little production, and my case, to the consideration of The Right Honorable The Lord Mayor, Aldermen, Sheriffs, and Gentlemen of the Corporation of the City of Dublin.

And am,

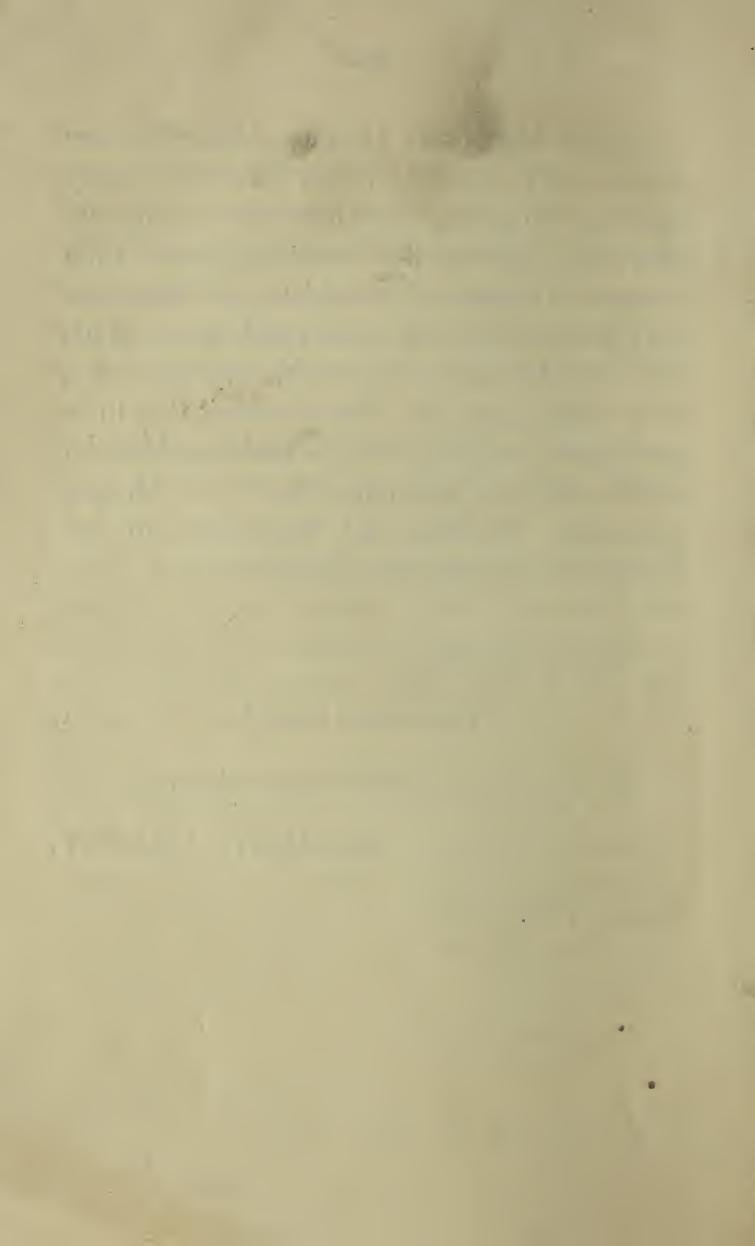
Their most humble,

And obedient Servant,

ANDREW COFFEY.

October, 1829.

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